Curr Psychol (2010) 29:320–327
DOI 10.1007/s12144-010-9091-9

Paranormal Encounters as Eyewitness Phenomena: Psychological Determinants of Atypical Perceptual Interpretations

Matthew J. Sharps · Elaine Newborg · Stephanie Van Arsdall · Jordan DeRuiter · Bill Hayward · Brianna Alcantar

Published online: 23 November 2010
© Springer Science+Business Media, LLC 2010

Abstract Many people who report paranormal sightings (e.g., Bigfoot and UFO aliens) are apparently sincere. This places many such sightings in the category of eyewitness errors, rather than of deliberate deception. Recent research has supported this idea; in an earlier paper, we demonstrated that paranormal beliefs are facilitated by tendencies toward attention deficit hyperactive disorder, dissociation, and depression. These characteristics predicted specific patterns of beliefs in several paranormal phenomena. The present research addressed the question of whether such psychological tendencies would tend to create bias in perception and interpretation as well as in belief- in whether a person's identification of a given stimulus as paranormal in nature would be influenced by the same factors previously demonstrated to influence paranormal beliefs. This hypothesis was supported. Specifically, those with dissociative tendencies were significantly more likely to identify given stimulus items as paranormal in nature than were those with lower dissociation scores. Dissociation was further shown to be related to paranormal beliefs, consistent with earlier findings. Results are discussed in terms of the reconfigurative dynamics known to operate in areas of human cognition such as eyewitness identification, and in terms of the generality of those effects to the realm of paranormal sightings.

Keywords Eyewitness processes · Paranormal sightings · Dissociation

As has been the case for decades, paranormal sightings of such things as Bigfoot and space aliens continue to be reported. Such sightings must have their source either in

M. J. Sharps (✉) · S. Van Arsdall · J. DeRuiter
Department of Psychology, California State University, MS ST 11, Fresno, CA 93740-8039, USA
e-mail: matthew_sharps@csufresno.edu

E. Newborg · B. Hayward · B. Alcantar
Department of Forensic Clinical Psychology, Alliant International University, Fresno, CA, USA

psychology or in physical reality. Believers in the physical reality of paranormal phenomena may hold that it is impossible to state *with absolute certainty* that such things as Bigfoot and space aliens do not exist, in some physical sense. However, responsible investigators of the paranormal freely admit that at least the *majority* of sightings of such things as aliens, unknown hominids, and ghosts result from errors of observation or interpretation (see Coleman and Clark 1999; James and Thorpe 1999; Mackal 1976; Wylie 1980).

Thus, even for believers in the physical existence of the paranormal, it is clear that the bulk of paranormal observations lie in the realm of the psychological rather than of the physical. The vast majority of paranormal sightings fall squarely within the realm of eyewitness error, albeit of an extreme type. Therefore, a better understanding of the dynamics of paranormal sightings should help to shed light on obscure points of interest in the eyewitness realm as well (see Sharps 2010).

In an earlier paper (Sharps et al. 2006), we found that specific psychological tendencies were systematically associated with particular types of paranormal or cryptozoological beliefs. These tendencies, evaluated by means of standard psychological instruments, included subclinical levels of hyperactivity/impulsiveness, dissociation, and depression. The relationships between psychological tendencies and belief types were relatively specific. Depression was associated with belief in ghosts. Both depression and the hyperactive/impulsive aspects of ADHD were associated with UFO/space alien ideation, and hyperactivity/impulsivity was also significantly associated with beliefs in such phenomena as Bigfoot and the Loch Ness Monster.

These predictive associations were suggested by theoretical considerations discussed in detail in the previous article (Sharps et al. 2006). For example, depressed individuals can relate to ghosts as evidence of an afterlife in which things might get better. The relationship of hyperactive/impulsive tendencies to belief in cryptids is readily related to the adventurous, exploratory psychological tendencies typical of subclinical manifestations of those conditions (Hartmann 1997).

In our previous work, dissociation was associated overall with enhanced levels of paranormal beliefs, although not with any specific belief type. This reflects the more Gestalt processing tendencies (Sharps 2003) associated with dissociation, even at the subclinical level. Those with dissociative tendencies are less likely to open their beliefs to the type of analytical, feature-intensive criticism which would typically lead to a rejection of paranormal beliefs. Rather, they operate instead in a relatively Gestalt, wholistic cognitive realm, in which the absence of specific feature-intensive analysis allows illogical connections within paranormal belief systems to go undetected (Sharps et al. 2006; also see Sharps 2003).

Thus, the results obtained in our earlier paper (Sharps et al. 2006) were consistent with these considerations in terms of psychological predispositions to paranormal and cryptozoological *beliefs*. An additional important question remained: specifically, whether or not such psychological predispositions would actually influence *perception and interpretation*.

Such influence, if demonstrable, would be explicable in terms of the known reconfigurative dynamics of perception and memory. Paranormal and cryptozoological sightings are not typically manufactured from nothing (e.g., Steiger 1978). The Loch Ness monster, when alleged shown in photographs, is never an invisibility

on calm waters. The "monster" frequently proves to be a school of salmon or a boat's wake, but in the majority of evaluable cases there is clearly *something*, rather than *nothing*, which initiates "perception" of the monster (e.g., Mackal 1976).

Even in the case of Bigfoot sightings, frequently made in partial darkness or under other suboptimal viewing conditions (e.g., Wylie 1980; also as discussed in Sharps et al. 2006), the archetypal disturbed vegetation and "tracks" in the earth indicate that the observation usually derives from the perception of *something*, from a brief glimpse of an actual physical object. The object in question is of course more likely to have been a deer or a foraging bear than an unknown hominid, but the point is that these observations are rarely, if ever, generated from nothing at all. Something, usually something fairly common and prosaic, is indeed out there.

Similar errors are frequently observed in eyewitness observation (e.g., Sporer et al. 1996; U.S. Department of Justice 1999) of faces (e.g., Shepherd and Ellis 1996; Sharps 2010), and of weapons and vehicles (Sharps 2010). The classic case was the metamorphosis, in the minds of eyewitnesses, of the blue Chevrolet Caprice driven by the "Washington Sniper" into the infamous white or cream-colored van repeatedly reported by witnesses in that case (e.g., Blades 2005; Horwitz and Ruane 2003). Similar dynamics have been reported with a variety of forensically-relevant items and elements at crime scenes (e.g., Narby et al. 1996).

These types of reconfigurative errors are readily predictable within the context established by Bartlett (1932; also see modern confirmation of these effects in Ahlberg and Sharps 2002; Bergman and Roediger 1999; Wheeler and Roediger 1992). Bartlett showed that memories in general reconfigure in the directions of gist, brevity, and personal belief. Not only do memories become eroded so that details are lost (brevity), leaving a rough central idea of the given memory (gist), but the beliefs of the given respondent as to what must have happened in a given situation, as opposed to what actually did happen, have a very strong influence on the memory ultimately reported by any given respondent.

These dynamics assume special significance in the realm of eyewitness memory. In our recent taxonomy of the most common types of eyewitness error (Sharps et al. 2009), errors resulting from imagination, extrapolation, or inference were the second most common type of mistake observed, exceeded only by errors in the clothing or physical characteristics of suspects.

Our recent theoretical formulation, Gestalt/Feature-Intensive Processing theory (G/FI; Sharps 2003, 2010) has been instrumental in further conceptualizing the dynamics underlying these reconfigurations. In the case of paranormal sightings, such factors as the typical suboptimal viewing conditions and high arousal on the part of the witness tend to yield a relatively unstructured Gestalt representation of the given percept, relatively barren of details. Such details, if present, would make it possible to engage in the feature-intensive analysis which would anchor that memory to the physical reality it represents; but since the necessary details are not present, the resulting, relatively barren gestalt is more amenable to change or to the addition of erroneous details. These false details may arise from post-event information, or from characteristics or cognitive frameworks brought by the witness to the given situation (see Sharps et al. 2009).

In summary, the work of Bartlett and the G/FI formulation suggest that the feature-intensive visual details which might prevent a paranormal sighting may be

lost in favor of an overall gestalt, the internal structure or logical sequencing of which is opaque to the given witness. In the absence of the details which might force, cognitively, a more accurate representation of the stimulus actually seen, that representation may be altered in accordance with personal beliefs, such as those governing ideas about the paranormal. The end result is the reconfiguration of a given cow in the dark into Bigfoot, or the transformation of a helicopter's running lights into the outline of a UFO. Such reconfigurative tendencies, of course, are significantly exacerbated by stress and arousal, by scene complexity, and by high levels of activity in the surround (e.g., see Burke et al. 1992; Narby et al. 1996; Sharps 2010). These are conditions typical both of crime scenes and of the settings of perceived paranormal activity.

In view of these considerations, we wished to address the degree to which the psychological predispositions identified in our previous work (Sharps et al. 2006) would activate or potentiate these reconfigurative dynamics, thereby causing respondents to see given stimuli as paranormal or cryptozoological in nature. This was the subject of the present experiment.

Method

Participants

Seventy-two women (mean age 19.39 years, SD 2.45) and twenty-six men (mean age 19.15 years, SD 1.38) were recruited from the Psychology Department Subject Pool at the California State University, Fresno. Proportions of females and males reflected the makeup of the pool. All respondents provided informed consent and were properly debriefed.

Materials and Procedure

A variety of photographs purporting to depict Bigfoot, aliens, or ghosts was obtained from public websites. Nine photographs of each category were used. Respondents were divided at random into three groups. Thirty-four respondents viewed photographs purported to be of Bigfoot or similar ape-like cryptids, thirty-three viewed "aliens", and thirty-one viewed "ghosts." Photographs were displayed serially by Powerpoint for five seconds each. These photographs alternated with grey slides, each displayed for a full minute to allow respondents time to respond to the given preceding photograph.

For each photograph, each respondent was asked to rate, on a 1–7 Likert scale, the probability that the given photograph actually depicted Bigfoot, an alien, or a ghost, depending obviously upon stimulus category. The respondents' scores on this 1–7 scale were termed the Paranormal Perception Index. The five-second exposure time was based on the standard used in our eyewitness memory studies (Sharps et al. 2009; Sharps 2010), having been shown to be adequate for the perceptual processing of similarly or more complex stimuli.

Following this presentation and rating task, respondents completed a modified Snellen test to demonstrate their visual ability to resolve pictures at the respondent-

to-screen distance employed in this study (between two and five meters). All respondents then completed a battery of instruments to assess individual differences in the relevant areas, descriptions of which follow.

As in our previous research, tendencies toward hyperactivity/impulsivity were measured by means of the F scale of the Conners Adult ADHD Rating Scales, a widely-used standard instrument for the purpose (Conners et al. 1999). Depressive tendencies were measured by means of the Beck Depression Inventory-II (Beck 1996). Dissociative tendencies were measured by means of the Dissociative Experiences Scale (Carlson and Putnam 1986). Finally, all respondents completed the Revised Paranormal Belief Scale (Tobacyk 2004). These instruments were presented in two counterbalanced orders. All respondents were assured, both orally and in writing, of the absolute confidentiality and anonymity of their participation in this study.

Results

A series of regression analyses was employed to evaluate the results of this experiment. The combined influence of the Conners-F, Beck, and Dissociation scores on the Paranormal Perception Index was significant, R^2=.095, F (3,94)=3.27, p=.025. However, neither the Beck nor the Conners-F scores were individually significant on the Paranormal Perception Index. Only Dissociation, as measured by the Dissociative Experiences Scale, was significant here, B=.327, p=.009.

In view of this result across stimulus types, the Paranormal Perception Index was regressed against Dissociation scores for each stimulus type individually. The effect of the Dissociation score on the Paranormal Perception Index was significant for "Bigfoot", R^2=.123, F (1,32)=4.49, B=.351, p=.04, and for "aliens," R^2=.116, F (1,31)=4.05, B=.340, p=.05. This effect was not significant, however, for "ghosts."

Scores on the Revised Paranormal Belief Scale were regressed against the Paranormal Perception Index across stimulus types. As anticipated, the effect was significant, R^2=.318, F (1,96)=44.74, B=.564, p=.001. Significant relationships between the Revised Paranormal Belief Scale and the Paranormal Perception Index were also obtained for each stimulus type, respectively for "Bigfoot" R^2=.420, F (1,32)=23.15, B=.648, p<.001; for "aliens" R^2=.197, F (1,31)=7.96, B=.648, p=.01; and for "ghosts," R^2=.325, F (1,29)=13.95, B=.570, p<.001.

Finally, Dissociation scores were regressed against scores on the Revised Paranormal Belief Scale. The effect was significant, R^2=.063, F (1,96)=6.46, B=.251, p=.01. An exploratory analysis of scores on the Revised Paranormal Belief Scale against the combined effects of the Conners-F, the Beck, and the Dissociative Experiences Scale yielded marginal significance, R^2=.077, F (3, 94)=2.61, p=.056, but only the Dissociation score approached significance in this model (B=.217, p=.055); neither Beck nor Conners-F scores were significant on Revised Paranormal Belief Scale scores. The order of instrument presentation also made no difference to the results.

Sex differences were also evaluated. Although these results must be taken with caution in view of the female/male disparity in subject availability, there was no evidence that either sex was more inclined to perceive stimuli as paranormal in nature.

Discussion

In previous work (Sharps et al. 2006), specific paranormal beliefs were shown to be associated with hyperactivity/impulsivity, depression, and dissocation. The present research demonstrated that a similar influence occurs on perceptual and interpretive processes, although, interestingly, only dissociation influenced respondents' tendencies to see and interpret stimuli as paranormal in nature.

It makes sense that the pattern of influence on perceptual and interpretive processes should differ from the pattern of influence on belief. Beliefs in the paranormal can be held in a relatively gestalt sense (e.g., Sharps 2003) without immediate direct challenge from the physical environment; people can believe in Bigfoot, for example, without necessarily expecting to see one in their yard. However, a given specific figure purported to be a Bigfoot, a space alien, or a ghost, is a much more immediate, feature-intensive reality. In the case of perception and interpretation, one must determine, to one's own logical satisfaction, whether a given picture represents a living creature or a special effect. In the present experiment, dissociative tendencies were shown to influence this determination significantly.

Dissociation may be "defined as the lack of integration of thoughts, feelings, and experiences into the stream of consciousness" (DePrince and Freyd 1999, pg. 449). In view of this definition, the probable mechanism operating in the present experiment makes logical sense. Those who are less likely to integrate immediate feature-intensive information into their interpretation of a given pictorial representation are less likely to consider, at least in an immediate sense, the relatively diminished likelihood that a paranormal sighing is genuine.

This diminished integration, as has already been seen (Sharps et al. 2006) influences belief structures, creating a more fertile field for Bartlett reconfiguration in the direction of personal belief in such phenomena. This belief structure, in turn, helps to insulate the cognitive processing of the given sighting from the feature-intensive realities already discussed. The significant relationship between scores on the Dissociative Experiences Scale and scores on the Revised Paranormal Belief Scale is consistent with this interpretation of these results.

There is no question that the reconfigurative dynamics suggested here occur in other realms of eyewitness cognition. As mentioned above, in our recent taxonomy of eyewitness error (Sharps et al. 2009), errors originating in the mind of the eyewitness, through imaginative, inferential, or extrapolative processes, constituted the second most common type of mistake. Many of these were highly elaborate, involving the conjuring of nonexistent details or persons into a given scene. Respondents frequently created convoluted backstories or complex tales of the future actions of perpetrators. If the majority of paranormal sightings may be interpreted in eyewitness terms, as suggested here, it is therefore not surprising that perceived paranormal encounters are recounted in the most elaborate terms, even when derived from brief glimpses of vastly more prosaic natural phenomena.

It has been suggested that "most people report some dissociative experiences" (DePrince and Freyd 1999, pg. 449). This suggestion yields an important caveat. Dissociation, to some degree, is part and parcel of the human psychological makeup; therefore, we emphasize most strongly that any given witness, who claims that a given event is paranormal in nature, need not be abnormal or "crazy" in any sense.

The obvious sincerity and rationality with which such sightings are frequently reported clearly indicate that such "encounters," and the resultant interpretations, can happen to anybody (e.g., see Coleman and Clark 1999; Mackal 1976; Wylie 1980).

A variety of social dynamics may be operating here, as well. The fact that "Bigfoot" and "alien" perceptions were subject to the effect of dissociation, whereas "ghosts" were not, may simply point to the relative marginality of the beliefs which mediate the various perceptions. Ghosts, culturally, are probably seen as less of a "fringe" phenomenon than either monsters in the woods or creatures from outer space. As in our previous research, a given witness arrives at the relevant beliefs from many sources, including familial or environmental influences. In short, the present pattern of findings certainly does not depict the only possible avenue to beliefs or interests in atypical phenomena. However, the present results indicate the importance of future research on the social psychology within which the individual and cognitive psychology of the present work is embedded.

The present research has demonstrated an empirically verified pathway by which paranormal sightings may be generated and reported, placing these phenomena squarely within the realm of eyewitness psychology. Based on these findings, we can suggest that the average paranormal sighting represents an extreme case of eyewitness error. If so, the demonstrated relationship between dissociative processes and the generation of such errors in extreme cases may have a more subtle reality in less extreme cases. These processes are of the same type frequently presented in criminal courts. Therefore, the study of individual differences in such areas as dissociation should ultimately prove useful in the assessment of eyewitness veracity in criminal cases. Obviously, much research remains to be conducted in this area; but the present findings indicate at least that these research directions will prove to be productive.

References

Ahlberg, S. W., & Sharps, M. J. (2002). Bartlett revisited: reconfiguration of long-term memory in young and older adults. *The Journal of Genetic Psychology, 163*, 211–218.

Bartlett, F. C. (1932). *Remembering: A study in experimental and social psychology.* Cambridge: Cambridge University Press.

Beck, A. T. (1996). *Beck depression inventory- II*. San Antonio: Psychological Corporation.

Bergman, E. T., & Roediger, H. L. (1999). Can Bartlett's repeated reproduction experiments be replicated? *Memory & Cognition, 27*, 937–947.

Blades, H. B. (2005). The Washington, D.C., sniper case: a case study in how eyewitness identification of vehicles can go wrong. *Forensic Examiner, 14*, 26.

Burke, A., Heuer, F., & Reisberg, D. (1992). Remembering emotional events. *Memory & Cognition, 20*, 277–290.

Carlson, E. B., & Putnam, F. W. (1986). Development, reliability, and validity of a dissociation scale. *Journal of Nervous and Mental Disorders, 174*, 727–735.

Coleman, L., & Clark, J. (1999). *Cryptozoology A to Z*. New York: Simon & Schuster.

Conners, C. K., Erhardt, D., & Sparrow, E. (1999). *Conners' CAARS adult ADHD rating scales*. New York: Multi-Health Systems.

DePrince, A. P., & Freyd, J. F. (1999). Dissociative tendencies, attention, and memory. *Psychological Science, 10*, 449–452.

Hartmann, T. (1997). *Attention deficit disorder*. Grass Valley: Underwood.

Horwitz, S., & Ruane, M. E. (2003). *Sniper*. New York: Ballantine.

James, P., & Thorpe, N. (1999). *Ancient mysteries*. New York: Ballantine.

Mackal, R. P. (1976). *The monsters of Loch Ness*. Chicago: Swallow.
Narby, D. J., Cutler, B. L., & Penrod, S. D. (1996). The effects of witness, target, and situational factors in eyewitness identifications. In S. L. Sporer, R. S. Malpass, & G. Koehnken (Eds.), *Psychological issues in eyewitness identification* (pp. 23–52). Mahwah: Erlbaum.
Sharps, M. J. (2003). *Aging, representation, and thought: Gestalt and feature-intensive processing*. Piscataway: Transaction.
Sharps, M. J. (2010). *Processing under pressure: Stress, memory, and decision-making in law enforcement*. Flushing: Looseleaf Law.
Sharps, M. J., Matthews, J., & Asten, J. (2006). Cognition, affect, and beliefs in paranormal phenomena: Gestalt/feature intensive processing theory and tendencies toward ADHD, depression, and dissociation. *The Journal of Psychology, 140*, 579–590.
Sharps, M. J., Janigian, J., Hess, A. B., & Hayward, B. (2009). Eyewitness memory in context: toward a taxonomy of eyewitness error. *Journal of Police and Criminal Psychology, 24*, 36–44.
Shepherd, J. W., & Ellis, H. D. (1996). Face recall- methods and problems. In S. L. Sporer, R. S. Malpass, & G. Koehnken (Eds.), *Psychological issues in eyewitness identification* (pp. 87–116). Mahwah: Erlbaum.
Sporer, S. L., Malpass, R. S., & Koehnken, G. (1996). *Psychological issues in eyewitness identification*. Mahwah: Erlbaum.
Steiger, B. (1978). *Project blue book*. New York: Sphere.
Tobacyk, J. (2004). A revised paranormal belief scale. *International Journal of Transpersonal Studies, 23*, 94–98.
U.S. Department of Justice. (1999). *Eyewitness evidence: A guide for law enforcement*. Washington: National Institute of Justice.
Wheeler, M. A., & Roediger, H. L. (1992). Disparate results of repeated testing: reconciling Ballard's (1913) and Bartlett's (1932) results. *Psychological Science, 3*, 240–245.
Wylie, K. (1980). *Bigfoot*. New York: Viking.